

REMARKS

This Amendment, which is timely with the accompanying Petition for Extension of Time, is filed in response to the Office Action dated November 8, 2005, wherein and claims 1 – 31 were rejected as anticipated by or obvious in view of the prior art. Claim 32 was withdrawn from consideration pursuant to a restriction requirement. By this amendment, applicant has: (1) amended claims 1, 9, 10 and 23, (2) cancelled withdrawn claim 32, and (3) added new claim 33. Claims 1 – 31 and 33 are pending. Reexamination and reconsideration in view of the above amendments and following remarks are respectfully requested.

Claim Amendments

Independent claims 1 and 23 have been amended to specify that the solder melts and reflows prior to the time the polymer is cured. Applicant believes that this requirement was implicit in the claims as originally filed. However, applicant now wishes to make this requirement express. Support for this amendment is found in paragraphs [0020] and [0026] of the application as filed.

Dependent claim 9 has been amended to remove the word “matrix” for clarity. It is believed that it is more precise to say that the uncured polymer, rather than the matrix, is a liquid at room temperature. As taught in the application, the matrix comprises a mixture of liquid polymer and solid solder particles. Claim 10 has been amended to change the dependency from claim 6 to claim 1.

New dependent claim 33 has been added to specify that the polymer is cured at a temperature that is lower than the melting point of the solder. This is described, for example, in paragraph [0027] of the application. It is believed that this feature is not disclosed in the prior art of record.

Traversal of Rejection

Applicant respectfully traverses the rejection of the claims. Independent claims 1 and 23 were rejected as anticipated by U.S. Pat. App. Pub. No. 2001/0038093 to Nguyen. As to claims independent claims 1 and 23, Nguyen does not teach that the solder melts and reflows within the matrix prior to the time the polymer becomes cured, as required by the independent claims of the

present invention. Accordingly, Nguyen does not anticipate these claims, or any of the claims dependent thereon.

In addition, claims 1 and 23 specify that the polymer “hardens.” Nguyen does not teach the use of polymers which become hard. Rather it describes its polymers as “elastomeric” “soft gel” “silicone rubber” upon curing, see, *e.g.*, paragraphs [0014] – [0020]. For example, the patent states: “The resin mixture can be cured ... to form a compliant elastomer.” Paragraph [0020]. (“Compliant” is defined in Nguyen to mean “yielding and formable at room temperature, as opposed to solid and unyielding.” Paragraph [0018].) Thus, none of the examples disclosed in Nguyen have a resin that is hardened, as claimed in the present application.

Claims 1 and 23 were also rejected as obvious over U.S. Pat. No. 6,926,955 to Jayaraman, et al., (“Jayaraman”) in view of any of the following references: Kirsten (WO 97/07542) McCormack et al., (U.S. Pat. App. Pub. No. 2001/0030062), or Pennisi, et al., U.S. Pat. No. 5,128,746. Jayarman differs fundamentally from the present invention because it teaches the use of “phase change polymers.” Jayarman’s phase change polymers become liquid when raised to operating temperature of the electronic device. Thus, the patent does not teach polymers which harden when cured, as claimed in the present application. The use of phase change polymers is a fundamental, core teaching of Jayarman, such that there is no motivation to substitute a polymer that hardens. Thus, for example, Jayarman’s invention exploits the fact that when the phase change polymer is heated it flows into cavities, thereby facilitating thermal transfer. See, *e.g.*, column 4, lines 20 – 36.

Kirsten, McCormack and Pennisi each teach use of a resin that does not reflow when heated. Their teachings are directly contrary to the teachings of Jayarman, which is directed to phase change polymers which liquefy when heated, and no motivation or suggestion has been shown for combining any these secondary references with Jayarman. Moreover, there is no reason to believe that the fluxing agents described in Kirsten, McCormack or Pennisi have any utility with the phase change polymers of Jayarman. For example, it seems equally possible that the addition of a fluxing agent might interfere with the reflow properties of a phase change polymer.

Claims 1 and 23 were rejected as obvious over Nguyen in view of Jayarman. Both of these references are discussed above. It is submitted that there is no motivation shown to combine their teachings. Again, Jayarman is directed to the use of unique phase change polymers that

liquefy when heated. There is no showing that the phase change polymers of Jayarman are compatible with the polymers of Nguyen.

In view of the foregoing comments it believed that the independent claims are allowable. Accordingly, all of the dependent claims should also be allowable.

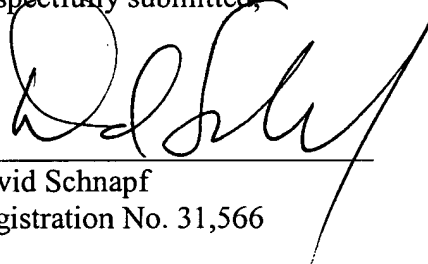
Conclusion

In view of the foregoing amendments and remarks, it is believed that the application is now in condition for allowance and favorable action is earnestly solicited. The examiner is invited to call the undersigned at the number listed below if doing so might advance the prosecution of this matter.

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Respectfully submitted,

A handwritten signature in black ink, appearing to read 'D. Schnapf', is written over a horizontal line.

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